

CSci 1302 Assignment 4

Due Wedn., October 6, 2004

Problem 1 (3 points). Demonstrate validity of the rule “hypothetical syllogism” on top of page 71 using a truth table.

Problem 2 (7 points). Exercise 5.4 on p. 76, Parts 2 and 3.

Problem 3 (25 points). Write down deductive proofs for the following arguments:

1. $(p \vee q) \Rightarrow r$

$$\neg r \Rightarrow \neg p$$

2. $\neg(p \Rightarrow q)$

$$p \Rightarrow r$$

$$r$$

3. $p \wedge \neg r$ (use proof by contradiction)

$$q \Rightarrow r$$

$$\neg(p \Rightarrow q)$$

4. $(p \wedge q) \Leftrightarrow r$

$$(r \Rightarrow p) \wedge (r \Rightarrow q)$$

5. $(p \vee q) \Leftrightarrow r$

$$(p \Rightarrow r) \wedge (q \Rightarrow r)$$